

33
15
26 4
33
5.9 4

8th buds of *V. antropae*

1.2	2.4	3.2
1.5	2.4	3.4
1.5		3.2
1.4		
1.4		

#12 Ninth Liberty St.

285

299

ONE PAGE ONLY
MR. KING FAYER
OF BANKSTON & CO.
1907
JUN 22 1908

271

Eggs laid by white ♀ Coleos erythraea Yasini
bal, June 8, 1891 on little alfalfa plant

Egg. Spraddle shaped, set on end, longitudinally
ribbed, the ribs hardly more than lines and
apparently very minute striated but hardly
seen with glass. Pale yellow, becoming reddish
Length 1.6 mm, width .5 mm. Laid singly

[Larva in 1st stage? Hd dull black. W. 2.5 mm
Body minute trans. creased dull dark greenish
Length 1.6 mm when found Molt June 8 Head

green with minute black dots, ocelli black,
mouth brownish W. 4 mm. Body dull green
minutely roughened & pilose, the roughness paler

Hatched June 11 Hd black, same as above desc.

Molt June 16 Hd round pale green thickly dotted with
small ^{from} black piliferous spots; ocelli black, mouth
pale; w. 7 mm. Body tan green, annulated,
covered with black piliferous dots, each sur-
rounded by whitish. A diagonal whitish
line. Ode short, blackish] Molt June 17 Hd green

Molt Jun 19 Hd green speckled with black piliferous
dots, mouth a little yellowish, ocelli black.

W 1.2 mm. Body as before but stig. line very distinct, white, almost absent on 13. Welt June 24 Hd. green, thickly covered with little black fibriform dots; ocelli black mouth brownish. W 2.2 mm. Body green, unmarked, the black fibriform dots each indistinctly surrounded by whitish. very faint indications of a dark d. & pale d-d line, stig. line distinct ^{light} white, marked below by a row of segmentary black spots. Later a pink & yellow line appears in the white band & the black spots are faint.

Chrysalis The slighter enlarged, and leaving
my cases projectly, large, head terminat-
ing in a point - as usual in this
eye prominent. Color light green, a
yellow shade on the point on the head
& a yellow lateral band on the abdomen
below which is a row of black dots and an
interrupted dark red streak. A row of
black dots at outer margin of my cases
2 19, w 4 mm. by hook & cremaster
Imago July 7 ♂ leolas extreme

leuc. .56. 842. 1.25Y 137 2.8 ratio .67
found .6 Y 8 1.3 1.8 CA 1.8 copied
des. of Rose Britt. land 272 from yr. - I.
mat. 5. *L. cornuta* on willow above bridge
at entrance of Nevada trail J. cornuta II
4d bilobed, the apices produced (l. cornuta)
tuberulate as if covered with *P. myrtillata* III
then wide, depressed along *cephalonia* IV
dull olive brown, the excrescences yellow
black, mouth darker. *Papilio van* ~~caerulea~~ V
lateral 3, 4, & 5, on 3 a pair of 2d lines
roughly tuberculate, 2 mm long. (On 4, 6)
11-13 small o-d tubercles *P. eupatorium* VI
and close together. A number of small ~~irregular~~
smooth elevated bluish dots *P. rutulus* VII
anally on 5-7 & 11-13. The properties olive
brown, shading into pinkish on joint
2-4, but still partly混oted with the
ground color. on the lump on 6, pale olive
yellow, except in a dorsal band where
the ground color prevails, a large patch
nearly white on 8-10 dorsally but on 8
and 9 laterally, containing a few streaks
of the ground color. An irregular band
200 microns *P. rutulus* VIII
on 8-10 *P. caerulea* IX

H. G. DYAR

white subterminal band on 5-13
spiracles ~~black~~^{black} pale centrally & encircled
by white. Processes on 3 & 4 terminal 3
blackish brown ventral mottled with
whites with a median ventral nearly
white line. Anal fold elevated in a curve
and body humped, turned to one side.

Pupa June 13 As usual in *Limnitis*. Eye cases
prominent, pointed, thorax keeled, eye cases
very large, projecting; on the ant. part of the
abd. dorsally is a very large circular disk
like projection, its sides somewhat creased.
Abd. tapering the 1st 2 segments rounded off
narrower large, flat, posteriorly it in-
creases looks in the front of a silk spun by
the larva from which the pupa is suspended
Cases & abd. hump translucent, olive
gray; thorax dull purplish mottled with
white; abd. nearly all solid white but
shaded with gray and black, dorsally, laterally
and in a broad ventral band, but the terminal
segment & a narrower one entirely black.
Length 25 mm; thickness through thorax 7 mm.

H. milner choke cherry & poplar
YEAR.

Height of adult poplar 3000 ft. greatest
width through wing cases 8 mm. ✓
Imago June 27 *Limnitis lorquini*
Egg June 28, Subspherical, the base
flat, covered with rounded depression,
from the intersection of the elevated ret-
iculations, which cause them to arise short
spines ~~the ap. ver. the others are rounded~~ ^{D. 9 mm}
silver lustre. Lg. at tip of leaf.

Stage I. June 29 on little perch made of bits of
tip open to end of leaf. Hd. round, ~~post~~ ^{posterior} not shiny, eyes & jaws black, a few minute
hair from yellowish elevated bases W. 6 mm
Body slightly enlarged at 2, feet normal,
yellowish, with rows of short conical tubercles
largest dorsally on 3, 4, 6 & 1/2 with some
very short and minute hair. In a long perch
Egg hatched July 3 W. hd. 6 mm as above. L. 2.3 mm
molt July 3 Hd. rounded, brown, with 2 pale
lines in front converging toward vertex roughly
tuberculate, the tubercles yellowish ^(sh. hd. 9) W. 9 mm
Body densely tuberculate, each tubercle with

* 1 black dorsal dot on 8 ^{egg}. Indication of a
white s-v band especially in 11-13. Feet black
H. G. DW
several points, besides many minute gran-
ules. YOSEMITE A. L. 11

Several joints, besides many minute growths.
YOSEMITE AL.
Relation. General color dark brown with

a broad dull olive green patch which widens on joint 3-5 and 8-10. Sits out at end of long perch with bits of dead leaf at base.

Nov 6 Bulb 7 Hd bilobed, bulging in front, very
rob., tuberculated but tubercles not large.

Color dull brown, clypeus & tubercles pale, the latter, laterally, tipped with yellowish $W. 1.4$ mm. [Skead 1.3]

Body rough & tuberculate, a pair of 5-d tuberculate processes on each joint except 2, three on 3, 12 & 13 largest, three on 4, 6 & 11 next in size, the other all smaller. Other smaller tubercles in a double d-line & 2 lateral rows, numerous small granulations. Body black with a dorsal white patch on 8-10, reaching down the side on 9

All the interbrach & grammalia are dull yellowish
more especially on joints 2-4. Bands no perch.

July 12 Hd bilobed, densely tuberculate, the tubercles larger laterally & especially so at the acuity, blackish brown, darker centrally the tubercles pale 1.8 mm. ^{round wavy like prominences} Body with a series of tubercles the 3-4 are on 3-4 are produced into a pair of horns 1 mm long, these 8-9, 12 & 13 larger than others. Body densely tuberculate black, a dorsal white patch 8-10 mm wide on 9 all tubercles pale brown. Some clean color ✓ on 3-4 of

calc. .47 .73 1.1 1.8 2.8 ratio 64/16

found - - - 1.0 1.8 2.8
real color brown mottled & striped with black esp.
mainly in dep. bet. the 1 and 5 around the spiracles. A
large silvery spot just 3 to the side a small one on
point just front. to it. L. of pupa 18 mm. w. 6

Grab on wild gooseberry (Ribes) (Cat no 6648)
H. G. DYAR

Hd square, flattened in front, tuberculate and

YOSEMITE, CAL

of each lobe. Bases of antennae pale. W. 1 mm.

Body reddish brown with long black spined
processes as follows on 2. rows, but a few hair

processes as follows on 2 more, and a few more in 384 s.d. & stipitate with a few hair S.V.

an 5-12, 1 dorsal spine, 5 d, lateral & soft

on 13 this 8 d. C-shield, anal plate & feet
and spine black except bases of those in

3, 4, 6, 8, & 10 which are yellow, the
others being white.

d. 2 s.d. Spines on 4, 6, 8, & 10 very especially yellow. Spines black in a white ring

Un irregular doble wavy d sind Stig.

one yellow band. ✓
rest of body nearly black. Wid

head 1.87
head 1.7 mm. to stage advances the styl. in
5.5 to 11.5 mm. to stage advances the styl. in

is in diphœc, above & below the spadix, irregularly
waved with a third part more indistinct
and larger.

and bags. Woker subsequently, & I seal him in much replaced, especially anteriorly, by transverse streaks on the annelites which are left

shed off. 6 pale yellow posteriorly
and line punctuating more of the character
of anal line. ~~OS~~ ¹¹ of spine on 8 & 10 pale
yellow, on 3, 4 & 6 buff. In pupa anal
fins elevated, head turned around back

Molt June 5-23 Hd pilobed, a spined process at the
vertex of each lobe, below which is a smaller
process not spined but tipped with a hair. Claspers
large, color shiny black with many small
yellow pitiferous tubercles. W 2.8 mm. Body black
the ~~spine~~ ^{spine} block, large, except the
spined processes

3-6 which are orange, while those on
8 & 10 have their bases white and tip pale
orange. A narrow dorsal pale yellow line
on 2 & 3. On 3-6 trans. streaks of orange and
on 7-12 of creamy white, especially in the
post. incisives, connected on 8-11 by traces

of a double dorsal line. St. line repeated
by a few orange spots in the region of the
spines. Spine block to the stage
advances the white increases on the dorsum
appearing more faintly at bases of the process
on 7, 9 & 11, leaving however a distinct oblique
elongate patch of the block, ^{on joint} group color
before each 3-d spine ^{1/2 in.}

Another on mid current same but very red, hind
color is still black but largely obscured by the dorsal
white marks a ventr. very pale. All the normally black
spines are dark red, the 5-7 are straw color.

Spine on 3-6 are orange, 7-12 white tipped reddish
but not red, claspers eyes & spines whitish
June 30 Pupa July 1 As in ~~Scaph~~ Thorax with a
dorsal emarginated prominence, a papilla over
the eye & 2 laterally on edge of wing cases. A 5-d
row of rounded points & another lesser row below
the spines. Very cases properly Abd tapering
dorsum large & flat, its surface is butta & gives

H. C. ^{11/11} ~~Copy~~ ^{copied}
YOSE 274. CAL. ^{3/1891}

Ischid ¹ on gooseberry stem June 14, 1891
elongate, elliptical, flatt below, the ped all
short, sides sloping, dorsum forming a narrow
flattened ridge, slightly wider on 3 & 4; body
highest at 5, tapering down each way to the
extremities, Hd articulated under 2 - pale testaceous
the mouth part surrounded with brown. W 2 mm
Body minutely pitted, with very small white
granulations, a s-d white line along the
ridge (6-1.3 mm apart) interrupted at the
sq. incisives (which are deep) beginning on 3,
most distinct on 3 & 4, somewhat faint
centrally and somewhat more continuous
posteriorly. A similar faint line on the
s-v. ridge, becoming obsolete at the extremities.
Both lines look as if not quite on the surface.
Length, 17 mm, width 5 mm. Spines small
circular, yellowish. No subdorsal tufts of
setae. Ossified very small, triangular, depressed
in the center of 2

Pupa June 20 Robust, short, rounded, dep.
resin bet. the Abd. small, abd. sep.

appressed, *Hammonia* D.Y. General color solid green, ~~most~~ ^{Yosemite} white abd. Abnormally, thorax with a few blackish speckles and a smoky black dorsal line which is continuous in a row of dots on the abdomen. Each side of this on the central part of the thorax is a white stroke ^{short} supplemented on the front part by a white curved line. On the abd. a ^{row} ~~row~~ of black spots and a number of small black dots besides an obscure white line on the first part of abd. each side of the dorsal row of dots. Abdomen pinkish laterally. Length 12 mm; width 5.5 mm
Imago July 6 Cat. no. 6594

Chrysophaenus arota Bd

Abd. cells.	3	5	7	11	18	28	4.37	7.64
found	3	5	9	12	19	28		

275 Oct 4, 1893

~~egg (ovule) on wild gooseberry. June 14, '91~~
~~rounded hemispherical [O] closely reticulated~~
~~with numerous depressions, forming rows running~~
~~to the vertex (like a thimble), micrograph a~~
~~circle of smaller elongate depressions [X]~~
 Some 40 rows all around the egg. Color solid
 grayish white, not shiny. Diam. 7 mm.

Laid in a mass, 2 layers, on back side of leaf

Hatched June 15 Hd pale notaceous, shiny, mouth
 brownish, eyes black. 11.3 mm. Body pale
 whitish, translucent covered with large
 black piliferous dots. Only the last 3
~~pair of abd. legs present~~ ^{first} at the larval stage
 about very actively. Abd. fat and minute
 warts

Molt June 22 Hd pale whitish notaceous
 densely spotted with black. smooth brown 11.5 mm
 Body pale soft green, 12 enlarged, the 2 and
 pair of abd. smaller than the abd. Piliferous
 dots large, black. A broad evident white
 stigmatal line besides numerous d, s-1
 and lateral similarly colored lines. Pile
 short, black.

Molt juv 27. Head pale white with large black piliferous spots around mouth brownish W. 9 mm. Body blackish green, a dorsal fd, faint lateral & broad distinct stripes, ventral white lines, the latter a little greenish centrally. Piliferous spot, large black, faintly encircled with whitish. Enlarged, feet normal, pale slate black.

Molt juv 1 Same. Piliferous dots not distinctly surrounded with whitish. Body minutely mottled with black. 12 a little enlarged feet normal, abd. each with 2 black dots ① 8. abd. dots as in Chrysa. ② not small ③ also not small. The feet greenish tipped black.

Spots black, with small white center. Hd. 12 mm. A broad dull red band appears in the center of the ophthalmal band. Black of body variable.

Molt juv 3 Head shiny pale whitish, articulated with brown and bearing a number of large black piliferous spots; ocelli black; a blackish streak at the vertex of each lobe. W. 1.9 mm. Body dull green, heavily mottled with black, especially at the sides where it is nearly

entirely velvety black. D. 2 8 d line narrow white, stig. solid reddish, bordered above & below by white. Piliferous dots black with white center. Leg. pale.

Molt juv 11 Hd pale whitish with a stripe of green, a patch of brown mottles on each lobe, bordered above & below by a broad dark brown streak; a number of large black piliferous dots; mouth brownish; ocelli black. W. 2.8 mm. Rostrum enlarged slightly at 12, feet ③ ¹³ ~~around by a whit~~ ^{black} ~~outline~~ ^{edges} normal, color blackish green, consisting of black reticulation on a greenish ground, a narrow white d. line interrupted by a series of black ^{black edges} intersegmental shades, double on 2, a reddish stripe s. dorsally, a narrow black-edged white sd line; a broad lateral black shade; piliferous dots white; a broad dull red stig. band bordered with white ventr. paler than above, mottled with brown, s-r. piliferous dots black. Spots white with a linear black edging. Feet all pale. Hair fine, pale, about 1 mm long.

9 ~~Molt~~ ~~of~~ ~~17~~ Hd. as before, Bill not smaller

b. Body as before but the green color is now
mostly replaced by a pale brown hue.

g. Thust of tail in a compact rounded elliptical
mound in the ground without web.

9. Pupa Cylindrical, abd slightly enlarged

bc centrally, cases moderate prominent;

12 a slight depression bet. this & abd.

14 numerous very short, consisting of 2 fused
or spines, separated at the tips and two

on other outside, but in line with others

16 color light brownish yellow, unicolor

18 length 14 mm; w $5\frac{1}{2}$ mm darker in

mother abdominal sutures.

19 Head formed in pupae Sept 2 1891

Xylomiges pulubens Et (2)
Arch J.B.S.

noticed on? Yucante, (265B) Head pale whitish
brown, reticulated with dark brown, shiny.
mouth & antennae pale W. 2.5 mm Body
reddish brown only slightly mottled
by sparsely streaked with black. Bill
dots white. Places of a dorsal & a
paler line, defined by narrow blackish
bands & a broad shiny band encircling
the pale spines, only slightly more
yellowish than the general color & very
inconspicuous. Ventral pale. Body not
shiny. (head)

calc. .33 .63 1.38 2.6 ratio .53

Found ³⁵ H. G. D. & J. B.

Copied ³⁵ July 30 1911 277 Ichthyoma

Egg on willow, YOSEMITE AL. June 15, 1911. Hair smooth
or slightly wrinkled, base flat, flat edge

wrinkled, smooth, dark gray/black 3.8 mm. 7 mm

Hatched June 18 Hd shiny black, body pale

[Sh. 105] 4.4 mm. body slightly flattened, white

shield black, a few pale hairs, base

slightly enlarged dorsally, the lateral eyes

and 5, 7 & 12 dorsally are raised 2 hrs.

jet black, pale; mid. dorsal, at mid. 7, 25

hatched and body very stiff and less wrinkled

Spin together 2 hrs as a long & began to eat

[Sh. 105] 2.2 mm Hd brown ⁽⁶⁵⁾ Hd black shiny

central entire deep. Body flattened, pale

white yellow, narrow longitudinal faint, &

very broad lateral bands of dull white color

as also bump on 5 & 12. C. shield and

plate black, with dull greenish, leg black]

~~3rd~~ Head shiny black, body pale, a

few dark hairs. 2.7 mm. Body pale

as also pale above, 2-3 black the

body band pale, with an indistinct dorsal

line & dull white color. Head black with

width 3.0 mm. with a broad median line
first line of the body with a narrow hexagonal
stipulation [Sh. 105]. 1.5 YAR.

July 30 July 1 Hd pale in front, slightly velvety
brownish black, pale ^{dark} at the ^{dark} dorsal and ventral
dorsum; a few hairs. W 1.4 mm. Body pale
yellow, first 5 & 12, a triple black line, broad
lateral & crossed triple 3-4 line all
dark brown. C. shield and plate blackish
pale arise
Scattered hairs from smooth round tubercles
concolorous with the markings. Hair pale.

July 4 1.8 Hd pale brown shaded with black
a white line each side of the
a foot. eyes black, width 2.6 mm
body orange but the lateral band is faintly
shaded by a double yellowish line. 9.13
nearly all yellowish. The head smooth
tubercles are slightly yellow in the
yellow markings. C. shield and plate
brown, a few pale not distinct tubercles
Hair whitish from both body & head as
stage advances the colors become quite pale

and the off, in and in much changed, transverse
in 5 & 12 very slight, dark purple band
becoming pale purple
color whitish gray, a triple black dorsal
dark
dull purple line, 3 lateral lines, the
central faint dark, the other 2 white &

(Rhamnus cat) 278

Egg on coffee bush, spherical-conical, base flat,
smooth shiny chocolate brown; diam 1 mm.
Also on choke cherry. June 18, '91 (Matthews)

(277) cont

diffuse. & (U. the ad. GlinDxAR ^{more or less} somewhat broken
into mottles) ~~Yosemite~~ ^{Sierra} ~~Clay~~, (spicule
Mode) some purple or. mottles, some
yellow. Pil. tubercles yellow, annual in
any part & annual post spicule. Del.
apparently absent. Hairs whitish fibres.
one from each tubercle. Head not flat.

Cocoon of 2 leaves often together and bound with threads. Made July 19.

Pupa nearly cylindrical, flattened a little ventrally, gradually tapering posteriorly, but of nearly even width, no parts enlarged, dorsal side with a single prominent longitudinal, transversely wrinkled line, the wrinkles, the minutiæ in a band, that cannot be radiately strongly recurved form of minute hooks. The head also,

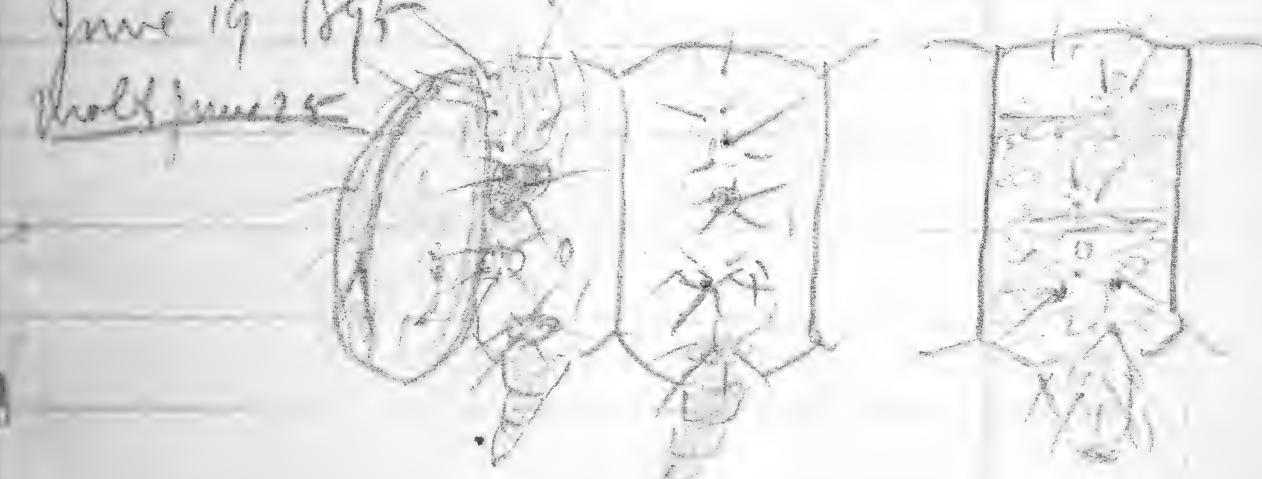
was thru nearly dark. L 11 in. w. 3.5 mm
Immature *F. tigris*. Carroll 442 *Leptura bifascia*

J. bifida

This species as well as L. brucei by Edw
must copy very near to L. man pitch
if they are ~~of~~ really western forms
of it, but the ^{pitch} of L. man is still
unknown so ^{it} is impossible
to compare the ^{copy} stages.

Schistogyna, probably Scutellaria. Hatched from
egg on poplar. Jefferson High and with
a willow.

June 19 1895



Pupa on a rock Yosemite June 17, 1891. Much like a Grafta. Thorax very slightly elevated centrally, & obscurely pointed. Eye cases large, wing cases very large, rising much above the elytrae at their posterior end, a gentle depression bet. thorax & abdomen. Abdomen curved ventrally, the ramaster fastened in a little button on the L side of venter. pupa touching along its ventral surface. General color chocolate brown shaded with pale brown and black; eye & wing cases black, slightly mottled with pale brown; thorax largely mottled with pale brown and with 2 dorsal black shades, obscure & diffuse. On the anterior part of each abd. seg. is a broad black shade, cut triangularly on the dorsal line by the pale brown band of the posterior part of the segment and shading into chocolate in the seg. margins. 2 little elevated black angular spots on each seg. Spinicle shiny black. L 20mm W 5.5 mm ^{5.5}

Abd slightly blunt & pointed at end, just covered by the thick band

call. 75	118	1.84	2.88	4.15	ratio .64
found 7	112	1.8	2.9	4.15	(27/32)
				280	
					<i>Hosackia grandiflora</i>
27/32					on bank of stream (Butterfield)
					Yosemite Col, June 8, 1891. Laid in under side.
					sight. cylindrical, slightly conical, flattened above and below. About 15 slight ridges running to the micropyle which is slightly depressed and obscurely reticulated. Color uniform gray pale yellowish brown. 9 mm. ✓
					Hatched 1/23 Hd large, rounded, shiny black. Sp. shield large, black, pointed well. Body not shiny, uniform greenish yellow, another pale spot
					Molt 1/28 Hd large, slightly blurred, dull black, covered with minute whitish ^(fatty hd 1/2) pale W/mm over all ^{1/2} covered large shiny black. Body uniform yellowish green, covered with minute pale green whitish granulations which seem to form an obscure 3d line. Dorsal vessel slightly darker. ✓
					Molt 1/36 2 Hd large, rounded, ^(soft hd 1/8) covered with minute black as in last stage. W 1.9 mm
					Body as before, 3d line indistinctly distinct
					Molt 1/47 Hd large, rounded, minute densely punctured, covered with minute white pale which does not obscure the surface. Color

9. *Microtis punctatus*, black. W 2.7 mm. L 6.5 mm.
 1. ~~2~~ ² ~~3~~ ³ ~~4~~ ⁴ ~~5~~ ⁵ ~~6~~ ⁶ ~~7~~ ⁷ ~~8~~ ⁸ ~~9~~ ⁹ ~~10~~ ¹⁰ ~~11~~ ¹¹ ~~12~~ ¹² ~~13~~ ¹³ ~~14~~ ¹⁴ ~~15~~ ¹⁵ ~~16~~ ¹⁶ ~~17~~ ¹⁷ ~~18~~ ¹⁸ ~~19~~ ¹⁹ ~~20~~ ²⁰ ~~21~~ ²¹ ~~22~~ ²² ~~23~~ ²³ ~~24~~ ²⁴ ~~25~~ ²⁵ ~~26~~ ²⁶ ~~27~~ ²⁷ ~~28~~ ²⁸ ~~29~~ ²⁹ ~~30~~ ³⁰ ~~31~~ ³¹ ~~32~~ ³² ~~33~~ ³³ ~~34~~ ³⁴ ~~35~~ ³⁵ ~~36~~ ³⁶ ~~37~~ ³⁷ ~~38~~ ³⁸ ~~39~~ ³⁹ ~~40~~ ⁴⁰ ~~41~~ ⁴¹ ~~42~~ ⁴² ~~43~~ ⁴³ ~~44~~ ⁴⁴ ~~45~~ ⁴⁵ ~~46~~ ⁴⁶ ~~47~~ ⁴⁷ ~~48~~ ⁴⁸ ~~49~~ ⁴⁹ ~~50~~ ⁵⁰ ~~51~~ ⁵¹ ~~52~~ ⁵² ~~53~~ ⁵³ ~~54~~ ⁵⁴ ~~55~~ ⁵⁵ ~~56~~ ⁵⁶ ~~57~~ ⁵⁷ ~~58~~ ⁵⁸ ~~59~~ ⁵⁹ ~~60~~ ⁶⁰ ~~61~~ ⁶¹ ~~62~~ ⁶² ~~63~~ ⁶³ ~~64~~ ⁶⁴ ~~65~~ ⁶⁵ ~~66~~ ⁶⁶ ~~67~~ ⁶⁷ ~~68~~ ⁶⁸ ~~69~~ ⁶⁹ ~~70~~ ⁷⁰ ~~71~~ ⁷¹ ~~72~~ ⁷² ~~73~~ ⁷³ ~~74~~ ⁷⁴ ~~75~~ ⁷⁵ ~~76~~ ⁷⁶ ~~77~~ ⁷⁷ ~~78~~ ⁷⁸ ~~79~~ ⁷⁹ ~~80~~ ⁸⁰ ~~81~~ ⁸¹ ~~82~~ ⁸² ~~83~~ ⁸³ ~~84~~ ⁸⁴ ~~85~~ ⁸⁵ ~~86~~ ⁸⁶ ~~87~~ ⁸⁷ ~~88~~ ⁸⁸ ~~89~~ ⁸⁹ ~~90~~ ⁹⁰ ~~91~~ ⁹¹ ~~92~~ ⁹² ~~93~~ ⁹³ ~~94~~ ⁹⁴ ~~95~~ ⁹⁵ ~~96~~ ⁹⁶ ~~97~~ ⁹⁷ ~~98~~ ⁹⁸ ~~99~~ ⁹⁹ ~~100~~ ¹⁰⁰ ~~101~~ ¹⁰¹ ~~102~~ 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~~435~~ ⁴³⁵ ~~436~~ ⁴³⁶ ~~437~~ ⁴³⁷ ~~438~~ ⁴³⁸ ~~439~~ ⁴³⁹ ~~440~~ ⁴⁴⁰ ~~441~~ ⁴⁴¹

scale 6.9 1.4 2.1 3.2 sat. 66

282 A

whitish, a darker dorsal line and yellowish red are the whole surface thickly dotted with small yellowish spots. No pectoral or dorsal. No chin, jaw and plate. Gills only 24 (22 long 22) 2.0 mm. a minute black spot, off center, 0.020.

seen and only one Feb 16, 1892, and did not find it. The fish is

282

Xantholana is based on *williamsi* Gmelin
Opere 18, 1891. Hd. bilobed, black,
not shiny, labrum pale, a few short pale
hairs. W. 4 mm. Body not shiny, pale yellow
immaculate, minute but sparse yellow
pilose.

(cont.)

Another fish Hd. bilobed, apices of lobes pointed
slight but without distinct tubercles, punctures
densely covered with short white hairs; labrum
smooth; w 2.2 mm. Body small at 2, largest
anterior, no c. third. S. g. uniform, rather deep
with minute pilose. Maculae pale green,
each which is densely covered with small
obscure yellowish spots; a darker dorsal and
pale yellow dorsal line, faint at extremes (see figs)
holotype Hd. very coarse, roughened, not shiny,
minute pilose; pale brown but black on
the labrum, occiput and vertex between the
apices of lobes also slightly along median
suture above claspers. The obscure whitish
vertical streaks on each side of the front
of the nose. Body uniform, rounded greenish

283 Aug 16

pale, jaws black. W mm Body flat ventrally
a or ridge, sides sloping, dorsal flat,
widest where the body is highest (5) and
narrowest to each extremity, minutely
granulated with white fine dots pale
white ~~xx~~^{decidedly whitish on the sides} soft light green (not yellowish) with
distinct 3-4 white lines, beginning at 3 mm
^{1.6 mm apart!} up to the midline to 5, then gradually
narrowing posteriorly, being faint and some-
what diffuse on 11-13, a circle very
distinct then or 2-3, fold, obsolete or
but distinct even to anal plate. On
the sides between the lines a series of
oblique faint white lines ^{joined on the steps} 2 or 3 in each step,
the body deeper above than in the others
widest 6, shield in centre of 2, small,
widest, deepest, irregularly triangular
L 15 mm W 4.5 mm

Pupa By a few other steps. The third ventral
abd. lobe, rounded, says. appeared; a

♀ Calc	46	71	11	1.7	2.6	4.0
♀ Found	4	5	1.2	1.8	2.6	4.0

Body corded (POSE) black, & dorsal yellowish [" ^{right by} ~~POSE~~ ^{right by} ~~POSE~~ 117 and 200 ²⁰⁰ C. A.] " ^{1/2" to 1" long} ^{1/2" to 1" long} [^{1/2" to 1" long}]

shake in 3, 4 & 9 and whitish at 5, 6 & 10. Later the bush turns darkish to black even to 11, 12 & 13.

dark blocks, 5d are large, hair like, but would hardly, the side hairs remaining white.

from a want, black, no brush top, pencil. ~~My 7 p.m.~~ ^{at report of} round, black shiny, a white line

no retractile tubercles, but the glossy $\frac{1}{2}$ above the mouth, and oblique (read oblique)

the latter are indicated by a dashed red σ/σ . Body dark gray, black dorsal, a σ -d band

on 10 & 11, and elevated, $\text{full moon} = 01.2 \text{ km.} \text{ at } 7$, and stay broken yellow band. all the

~~5th stage right June 24. A marked change. Hd more centrally wants ①②③④ { not tubercular & ciliated epith.~~

black, shiny; claspers pale, labrum & antennae fine bristles, the orbicular a little bright

white. W. 3.7 mm. Body velvety black, a bita ^{flatish yellow} varis & small. feet. fingers, other yellow.

buff and live in 3+4, represented by 1/2 of its hair long, black. Permits a dark stripe on

on 5, 8-11, a little further down the side of a
bush the flowers 6 even. long. (inner sh. half

Similar smaller arrows the whole length. ♂* (Coy dream on 3 & 4 yrs.) in a dark black & the ventral pale.

shield pale, shaded with black, its centre

shins on. Most of the ①-⑤ fine dark crimson, the not 3 ^{large} ^{white} with the beak and com. 4d 3 ^{large} ^{white} com. and

large, the bar long & black. Head flattened, regular, mouth & gills composed of thin skin.

Another, nearly as large, composed of an assemblage of small, 7.5 mm long! Retractable tubercles.

Common, a little higher than the road. (July 4 (no. 3) Hd. is over 3.6 mm. or more, which

Brush top large, all unicolored! branch. Egg white, thick.

silver gray, darker along the neck, feet, and at white joints, with white streaks on the

dark, almost black, ~~scold not full fled~~ (fully) the wings down from the back of the neck,
reddish black at their bases (though 3-4 feet long) stiffly, rigidly, smooth, ~~open~~ ~~wide~~ with a
notched ~~wide~~ ~~open~~ 4.0

have eggs to Packard, Linton & Sibley

Spupa Roberts, c. 1911. Dorsum caeca prominent.

Abd tapering, gradually longer & stouter along
a minute hooks. Sparsely covered with
soft short fine whitish hair. Color
rather light brown, speckled black.

Length 12 mm, width 5 mm. ✓

♀ but a very large & robust, thorax & cauda
small, wing case of moderate size. Abd
nearly cylindrical, somewhat flattened
widely in many hooks. Length very
shiny pale brown with a few scarcely
evident pale hair. speckled black
Length 22 mm; width 9 mm;
width thorax 4.5 mm. ✓

♂ 1911. ^{cauda} extremely large & robust, thorax & abd
decreased, wings larger than in ♂, width 6 mm
thorax & abdomen white with a faint brownish
tinge hair dense especially on abd. body
brown mostly with circular blotches on
thorax & abdomen, in ♀ faint brownish
tinge on body, no brownish blotches
Length 18 mm, width of abdomen 12 mm. ✓

Reared with ♀ May 24, 1911. Q. cana

283-

metres, on willow with currant & gooseberry
July 22, 1891 Hds 26 in 2.7 mm 2.7 abd
Abd black, shiny smooth, tapering & pale
Antennae pale yellow. Body not
enlarged at the first 13 segments. Ocelli
* tubercles very large, shiny brownish, each
with a single hair. ♀ post. spiracles ♀
paler. Hair not long, pale. Body covered
greenish white & in special color and
slightly translucent. a. d. & s. d. pale
white lines, a broad pale yellow stg.
line shaded with orange cent only
continued narrowly & indistinctly on the
* anal feet. Spiracles black. Body more
or less mottled with little whitish spots
Molt. Hd bright shiny red brown labrum & base of
antennae white, jaws & ocelli black. W. 4 mm
Thro. feet pale red brown. Body smooth & semi-
translucent white. D. & S. d. line narrow,
faint, whitish. Stg. broad pale yellow, encircling the black spiracles. Pillbox dots small
black, with somewhat elevated larger bases,
with a glass body covered with white fine
hairs. Line of hairs lined with silk with hole in
one end.

January 7th 1911 Cat. no. 6908 x 100 magnified

Imago July 15 cat. no. 6681. A feather wing moth.
Placida dactylus
A. E. S.
287 May 13 1898

On aster plants from 23. Like black but resembles a sawfly. Hd. rounded, lighter than inside, green, partly reflected. ocelli black, mouth brownish. Body nearly cylindrical, tapering a little each way from the middle. Uniform green with a whitish streak line and hairy areas and concolorous tubercles from which grow 7 or 8 radiating short white hair. 1 from the dorsal rows (2@3) another long dark hair follows, followed ④ beside each other near seta line. ③ lateral (2) of a step just small ④ 10 beside each other. 1 stg. the post. on a small (then the 2d fold) ^{small} ① 5-8 (5) 3-4, at base of leg. ④ 4-6 on 1st vent. 3rd vent. 1st, i.e. 3 the, 5-8 on 7-10 fold, the leg very slender, claspers larger. At extremes the vent. are fewer. ^{no com} Propt July 1 Long, slender, profusely covered by an aster only. The small, and tapering, cases projecting over abd. but, owing to extenstion. Uniform green covered with tufts of sparse and short hair like the lava. 2 1/2 in. to 2.5 mm

Calc. .32 .58 1.06 1.92 3.5 ratio .55
found .3 .6 1.1 1.9 3.5

cpd
10/21/91

S SS5 258.

Hatched as S. Found in a field near
Meads, Wash., June 24, egg shell color
dusky, base flat (top goes with small
vertical ribs, 2 diam. long, 1/16 in. high)
rounded, about 1/8 in. 3 mm. Case
and plate black, body very blackish
with a number of short white hairs.
Feet natural. Skin of 1000 mm. 10.
[St. hd. 6] * 2.00 7
most Run 27 Head black, shiny. a few hair. W.
5.7 mm Body dark, furnished with
rows of short conical tubercles each with a
long hair, blackish, those of ① & ② on 6, 8 & 10
pale yellow. Hair blackish, feet black.

most Bg 1* Hd slightly blotched, black, along a few
black hair from minute tubercle. W. 9 mm
Body black covered with spined processes as
in Scapt. Black but 3 dorsal on 6, 8 & 10 yellow
hair a fine black. ^{uniform}

most 2 Hd blotched black shiny many black
hair from elevated bases W. 1.7 mm Body
black, minutely dotted with yellow. Spines
black except base of 3 dorsal ones on 6, 8 & 10

Skin brown mainly of net.

which are ~~dark~~ yellow, ~~spines~~ apparent
~~arranged as in Scaptia [disc. in next, larva]~~
At ^{the} stage advances a very narrow ^{the} gennate
dorsal & single & not even yellow line appears
July 5 Hd rounded, much parts projecting
uniform sub-lunation black, around pale
base of antennae reddish. Covered
with black hair of considerable length which
arise from tubercles. Width 3.5 mm. Body
black with numerous minute yellow
pimplas ^{small} tubercles bearing whitish hair
The shafts of the body spines are all
one in this colorless but the margins
the bases being the black
& tips are all black. arranged as follows
Cervical (2) abd (2) a few spines (1) sub-etc.
(above bases of legs a cluster of 4-5)
large pit-tubercles. Joint 2 bases of spine
3-4 have but two (3-4 & lateral) while 13
ten but two, both 5-6 (i.e. one each 5-6 on
(the 9th & 10th abd segs) Body abd black
brownish subcentrally on the legs, a
row of obscure intersegmental stig mata
and dots and a similar row of larger

substg. 8-8 yellow dots. Lateral of
abdominal ~~dots~~ pale. Tibia base brown
of netting & leaves similar to Pyramia.
In some the substg yellow dashes almost
form a continuous band, and there are
indications of a gennate yellow ^{the} dorsal line
almost disappearing under the glab. however.
July 12 Purple (13 Hd. large. eyes prominent
thorax very slightly ridged along d line with
an elevated point post. centrally and a pair
of 5-6 small points, 2 point on the lateral
edge of wing cases & near middle of outer
margin of wing. Abd rounded dorsally, nearly
straight ventrally. Remains broad & flat,
the bases in ^a ~~the~~ 6-8 a row of conical points,
the bases in ~~the~~ button color golden white
with an obscure golden tint dotted with black
& shaded with smoky gray, broadly dorsally
(except a narrow d. line), narrowly stigmatized
& broadly ventrally, more irregular & crowded
on thorax & cases. All the points tinged
with shining gold or bronze. L. 13 mm
Imago July 21 Pyramia cardui.

calc. 33 47 67 96 1.37 1.96 2.8 4.0 ratio 7.0
found .3 .5 .7 .9 1.4 2.0 2.8 4.0
See 38295

289

Little hairy larva on willow, Yosemitc June 28
Hd bilobed (flat in front, black & shiny
mouth reddish 10.8 mm Body enlarged
anteriorly at 12 and apparently also at 15
as the part is held highest. Feet normal
densely black hair grows from black part
in 5 rows, (① apparently wanting*) ② & ⑥ small
body whitish, almost white in place
especially 3-d on 10-12. The hair is
almost wanting on 11 and is thick &
tufted from 5 dorsally. *because it is
almost in line and ④ is very small.
With 5-24 hair shiny, bilobed and the
claspers reduced to white [5.1.4] 1.47
down some coarse black hair by 1. mm
Body black & 3-d of feet yellow after
growing a broad band on 10-12 & 15-18 (16-18)
& 19) whitish, yellow band. The 3-d
hair on 10-12 is surrounded by a narrow
line below it, both ending on the front of 12
hair thick black, mixed black & white,
rest of shite. softer black hair 3-d on 12
and mostly on the black & a few

hair at 3-d only on 12, not near each other
Later narrow white lines, orange 3-d on 11.
July 2 Head bilobed, high, shiny black
mouth & 2 wavy bands each side of the
claspers white; midit 1.8 mm. Body as before,
hair long, white. 3-d tuft on 5 brown,
a smaller white one on 6; short 3-d
divergent ^{weak} pencils on 12. The feet black
Later the 3-d & 5-d bands become strongly
shaded with red after 3-d tuft on 5 & 6
separate into 2 tufts each.

July 6, Hd bilobed, black, shiny, then
white lines (the lower labrum) surrounded by the
claspers & bases of antennae which 10.2 mm
bordered with white laterally; vent white & spotted
Body black, a narrow interrupted
yellow dorsal line, a smaller but broader
crimson 3-d are, more distinct on 11 and a
more continuous ^{sub-shagreen} 3-d are. Hair
& mostly white, mixed with a few black,
gray head, thicker on anterior part
by. On joint 4 3-d, some brownish black
hair on 5 tan 3-d tufts of orange
and hair & below them a lateral strip of

short white hair; on 6 black tuft of short white hair, the tufts not distinctly separated but arranged fan-wise. On 12 the long divergent pencils of black hairs joint in a little enlarged & held elevated, with a small white tuft just below each. Has the appearance of *Argia BB284* at 11 & glauc ^{very} ~~small~~ small, ~~few~~ few. Spermatheca hairs large, orange & ~~very~~ ^{very} small, ~~few~~ few, rather small, a few plumed short white hairs from ① on 12 on 3 & 4, longer plumed brown tufts from ① & ② and white tuft from ③ on 5; white tufts from ① ② & ③ on 6; very hardly plumed black pencils from ① & ③ (the tufts are almost coalesced, 1 part of the stem) short white from ③ on 12, (the want of) on 12 is small & situated just below

March 18, 15 Found near watered. Hd. bill beak
bowed, sharp. Its whites of holes brown. Sutur
of clypeus & a central line white as a skeleton
& base of antennae. W. 4 mm. Body as before.
Spiacles white. Body black. Wings blue
vane, other less dark red. Antennae 3rd cell
green color, upper & on 3 brown. Mantle
pale, hair long, mostly blackish.
Palms green with tip & edge pale brown

(Read July 27) $\frac{1}{2}$ in.?

2994B

egg from abdomen, a broad band of
yellow, smooth, pale testes, yellow Dm.
Chartacea

The yellow stripe gives appearance of the yellow streak under the wings, the red and
variegated lines of the red veins & the spots of
the brown & white tufts & post. black & pencil

2914 30.318

Plumbate with jaenite (29)
If a, the whole is later and atg.
plumbate, the form looks, the
latter is later but joint. Sprinkle
small, faint ochreous, very acetous
form in presence. Width broad 2.2 mm
(24, 25-)

Color above, above & on wings pale green
below, yellowish green. Below, 1/3 of wing
uniform yellowish green with
a faint yellowish brownish washings
at base. Lateral stripe more distinct, the
sides of lateral part, pale yellow.

Calc. 63 .96 1.48 2.27 3.5 ratio .65
found 9 1.45 2.3 3.5

Mrs St John came to work

Oct 31st. Ten dollars for Nov
after chd 1/2 per month.

Dec 25th paid Margaret 10.00
of Jan 10th 291 P tremuloides
P tremulifera

Sluphisia on *Poplar* Keene July 2 1891

Abd very slightly bulbed, somewhat flattened
in front uniform pale green, sublustrous
mouth parts paler, jaws black; w 3.5 mm
Body long & slender, nocturnal form in appearance
without ^{any} ^{dots} humps nor tubercles, piliform ^{dots} ^{more} spot &
absent the hair being reduced to ^{the} minute undivided ^{dots}
minute undivided. Uniformly non-
lustrous pale green, semi-transparent,
showing plainly the insertion of dorsal rays
as obscure pale yellow stigmatal line
sprach dull ochre. Sit on web on back
of leaf. ^{in walking} feet normal, all weak, concolorous
the claspers whitish. Length 25 mm.

As stage advances ^{appear} to yellow line on side of
fun base of antenna behind stell. in this we see, line in
head, stig. line distinct, pale yellow
dorsal region whitish green, subvent
dorsal green dotted with yellow

14 on *Populus grandidentata* fat Yee U. J. May
31 1896 Found with Mr. Benten Müller also taken
steps ^{IV} & ^V exactly same! Walked June 3
Out Apr 14 1897 *S. avimacula* Hudson
Spruce range. fat found topped
with leaves. Head held out flat when
at rest. Abd mottled with white especially
darker white centrally &
below white traces of a ^{dot}
very white as a ^{dot} somewhat more distinct spot of
yellowish ^{dot} line on each side of the
dorsal vessel ^W bounded above very narrowly
with crimson on the thoracic legs, and
reaching nearly to the end of the ^{dot}
almost meeting around the anal plate
continuous with the line on the head when
the insect is in its normal attitude of rest.
Still later the ordinary piliform dot becomes
surrounded with yellow then are 7 on each ^{dot}
where they appear more distinctly on account of the absence
of hairs above stig. line & 7 in s & space with
other ^{dots} on ventral & legless segment ^W L 41 mm

Began to cov between 2 leaves July 8 Cocoon of
2 leaves & gummy silk. slight but tough.
Cuffa nearly cylindrical, rounded, no cre-
master; abd symmetrical, cases covered
creased; color uniform dark brown,
near black. L 17 w 6 ✓

Flowers at S. T. Jan 16, 1892 Cat no 6874
Sluphisia sericea (?) ^{see 318}
Another Keene Valley N.Y. June 29 1894

Calc. 1.2 1.8 2.8 4.3 6.6 ratio .65
Found 1.1 1.8 2.8 4.0 Cfd Aug 13, 1891

H. G. 292AR.

(deciduous)

Egg by ♀ H. californica on top Oak leaf singly
July 3, 1891 Yosemite. Nearly spherical, base
flattened a little, covered with hexagonal
elevated reticulations from the intersection
of which arise short spines. Color uniform
leaf green with a silvery lustre. W. 1.5 mm.

Hatched July 14. Another hatched July 13 Head 1.1 mm
large, round flat on the post. side, roughened
with a few little tubercles that bear minute
setae. Color pale wood brown, mouth dark
brown, ocelli black. Body cylindrical, with
short conical tubercles and many minute
granulations, each with a minute seta. The
s.d. tubercles on 3, 4, 6 & 12 are larger than the
others, color ^{not shiny} green, the tubercles pale yellowish
as are joints 12-13. Feet concolorous with body.
Length on exclusion from the egg, 4.5 mm.

Builds a fence of bits of leaf at end of the leaf.
molts July 20 Hd large rounded densely ^{with conical tubercles} covered
with 3 spines arranged in a Δ at the apex of each
lobe, pale greenish, with 2 brown shades, one before
+ one behind the eye running nearly to vertex.

Clypeus small, pale yellow brown, ocelli
in three spots at apex of lobes black. Many
of the spines at the sides tipped ~~black~~ ^{yellow} ~~black~~ OSEMITTE, CAL. with body
W. 1.8 mm. Body uniform indistinctly
covered with yellowish conical tubercles and
a s.d. row of tuberculated processes those on
3, 4, 6 & 12 much larger than the rest,
especially the one on 3) and ^{especially} 4 or 5,
black conical spines, color pale brownish
yellow with indication of a blackish s.d.
band and later subvertically a stripe
advances down becoming streaked with brown.
Molt July 25 Hd larger than body, pale belly and
somewhat flattened in front, not colored
but central spine depressed, clypeus small,
triangular, densely covered with tubercles,
a double row of long conical spines along
the sides and over the vertex, with emarginations
below the vertex of each lobe and a large
rounded tubercle above the ocelli. Hd
reddish brown, the clypeus, a vertical band
over the ocelli, tapering upwards to a point
and all the tubercles & spines yellowish
white, ocelli and the tips of the ^{short} s.d.
lateral spines black. Width 1.6 mm
Body as before, densely tuberculate, many of
the tubercles in the s.d. & s.v. regions ^{partaking}
the character of branching spines. On 3, 4, 6 & 12
are a pair of s.d. large thick processes (2.5 mm)
covered with granulations & large conical spine
like those on the head; on 8 & 11 a smaller but
similar pair. General color light reddish
brown, with a greenish tinge especially on
the sides. The processes are brown, most of the
tubercles & spine yellowish but the larger
spines are tipped with black. Leaves of a black
s.d. line and black dorsal markings between
the processes on 3, 4, 6 & 12

Molt July 31 Head very large, flattened before and behind, a small disk-like spot below, the outer form is front obtusely conical, clypeus rather small median spine deeper on vertex than elsewhere, front dorsal smooth with only a few slight granulations, but around the lateral edge vertex ^{are} a double row of long spines, the ventral ones most prominent, all intermixed with many shorter tubercles, much as in the previous stage. Brown with a ^{light} ^{yellowish} tinge in front, pale behind & below, a ^{light} ^{yellowish} band over the ocelli & another obscure one each side clypeus ~~yellowish~~ labrum whitish ocelli black, the spines, except a blade one below the apex of ~~each~~ ^{each} lobe yellowish white. W. 4 mm body densely covered with small conical pointed yellowish tubercles, on a yellowish ground which gives it a mottled green appearance, along the s-v fold these tubercles are very long & thick which give the appearance of a yellowish s-v line. A lateral row of angular conical tubercles larger than those on body, the ones on 3 branched; now on 2 or 3. The subdorsal row of processes are very long and large those on 3, 4, 5 & 6 the largest (5 mm) dark brown covered with many conical tubercles some of varying length white tipped with black. On 2, ^{and} 5-6 processes; on 5-6 a slight tubercle; on 7 a somewhat large one branched; on 8 & 11 a moderate process (2 mm) on 9, 10, 13 and anal plate a branched tubercle (in the s-v region) short hair arises from the granulations but not elsewhere on the body. Spine on 2 faintly black tipped, the other concolorous when at rest the head is turned down, cranial feet elevated, the process on 3 pointing forward & then on 4 projectingly after lateral, those on 6 turn backwards. Ocular spine long, tip ventral margin

H. G. D. Y.
YOSEMITE **CA.**

as ab. ad. the olive green assumes a rather lighter tint and shades into yellowish at the s-v fold. Spines Aug 10 begin to turn other yellow in patches especially laterally & at bases of horns. Aug 11 entirely yellowish, more ^{yellowish} below the head pale brown and 3 by tip on back of ^{head} ^{horns}.
 Pupa Shaped somewhat as in *Leimnitis*. A long, pointed, three sided angular prominence over each eye, a carinated ridge runs the length of the dorsum, on the thorax post. elevated into a prominence which diminishes rapidly posteriorly on the ant. part. of abd. a flattened prominence, much as in *Leimnitis* but less disk-like, from which the ridge continues down abd. end about 2 deg. from end. Very cases very prominent, projecting above the surface of pupa, with an irregular post. at base, & the outer margin elevated. Color pale yellow brown with many short darker brown stripes; a dark brown tinge along dorsal line, the edges of the cases & the joint over the eyes. Between the tho. & abd. prominences, along the thorax by the laterally and back of the eyes are large yellowish-white metallic patches, L 23 w 9 mm
 Image Aug 23

Heterodrusa californica

